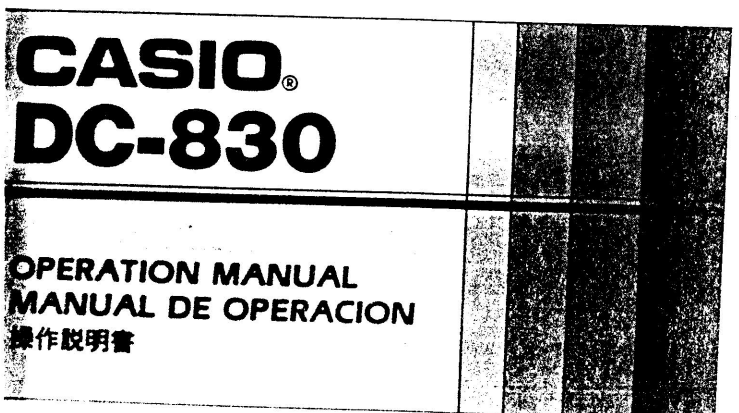
CASIO®

MO07129005A 主 西 中 Printed in Japan



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General Guide

- Your calculator is constructed of precision electronic components. Do not expose it to temperature extremes, sudden temperature changes or strong impact. Also, do not bend or twist it.
- At very low temperatures, the display response time may slow down or the display may fail completely. This is temporary, and correct operation should return at normal temperature.
- Note that the manufacturer assumes no responsibility for any loss or claims by third parties which may arise from use of this calculator.

- Note that the manufacturer assumes no responsibility for any damages incurred as a result of data loss caused by malfunction, repairs or battery replacements. The user should prepare physical records of important data to protect against such data losses.
- Always perform calculations by pressing the correct keys while monitoring results on the display.
- Do not press the keys using a pen or other pointed object.
- Avoid using volatile liquids such as thinner or benzine to clear the unit. Wipe it with a soft, dry cloth or a cloth that has been dipped in a neutral detergent solution and wrung out.

The Power Supply

Your calculator is powered by two lithium batteries (CR2016), one for the ***main power supply*** and one for the ***backup power supply***. The main power supply battery provides power for normal operations, while the backup power supply protects memory contents.

PRECAUTIONS:

Incorrectly using batteries can cause them to burst or leak, possibly damaging the interior of the calculator. Note the following precautions:

- Be sure that the positive (+) and negative (−) poles of each battery are facing in the proper direction.
- Never leave dead batteries in the battery compartment.
- Remove the batteries if you do not plan to use the calculator for long periods.
- Replace the batteries at least once every two years, no matter how much the calculator is used during that period.
- Never try to recharge the batteries supplied with the unit.
- Do not expose batteries to direct heat, let them become shorted, or try to take them apart.

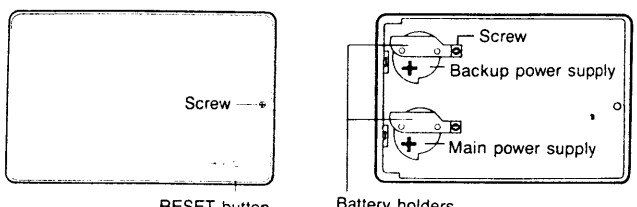
Keep batteries out of the reach of small children. If swallowed, consult a physician immediately

Important

- Memory contents are cleared when both the main power supply battery and backup power supply battery are removed at the same time. Be sure to leave one of the batteries in place to protect memory contents.
  However, if you remove the main power supply battery for a long period, memory contents may be damaged depending on the condition of the backup power supply battery. If this should happen, clear the memory contents using the RESET operation described on page 41.
- The life of the original batteries supplied with the unit is calculated from the date of installation at the factory, not from the date of purchase.

Replacing batteries

As battery power of the main power supply decreases, the display of the calculator will become dim and difficult to read. Replace the battery as soon as possible.



1. Loosen the screw securing the back cover of the calculator, and carefully remove the back cover. Note the two batteries inside of the calculator.
2. With the calculator positioned as illustrated, the backup power supply battery will be the one in the upper of the illustration.
3. Remove the screw of the battery holder you wish to replace, and remove the battery holder.
4. Wipe off a new battery with a dry cloth to allow proper contact, and then load it into the calculator.
5. Secure the battery holder in place by tightening its screw while pressing down.
6. Replace the back cover of the calculator and secure it in place by tightening its screw.

Auto Mode Change

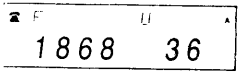
The calculator automatically changes to the time display from any other display if you do not perform any key operation for approximately six minutes. If you are in the middle of entering new data or editing data already stored in memory, and don't perform a key operation for six minutes, the calculator automatically chages to the time display without storing any data that is partially entered or changed.

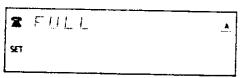
Controlling the Key Input Tone

The key input tone can be used for audible confirmation of proper key entry. Press the [C] key in the Alarm mode (see page 36) to switch the key input tone ON and OFF.

Displaying the Number of Characters Stored

Any time other than the time or alarm display, pressing the [CAPS N/S] key displays the number of characters stored and the amount of memory still available. The values shown in this display include the total of TEL, SCHEDULE and secret area.





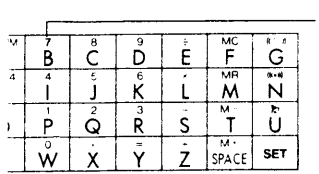
(FULL message)

- The decimal portion for the amount of remaining memory is automatically cut off, while that for the amount of memory used is rounded up. About the remaining memory capacity, see "**Calculating the Remaining Memory Capacity**" on page 31.

- The message "FULL" appears on the display if there are already 1,889 characters for SCHEDULE mode (1,902 characters for TEL mode) stored in memory (TEL mode+SCHEDULE mode). This message means that no more area is available. At this time, delete any data items (TEL and SCHEDULE) that you no longer need (see page 28).

Inputting Keys

Enter characters, symbols and spaces by pressing the corresponding keys on the calculator. Press the [SET] key to store the entered characters into memory. Note that each key on the calculator is marked with two symbols. This means that a single key can be used to input two different characters. The character input by the key is determined by the calculator's ***input mode***. Each time you press the [ALPHA] key, the input mode switches between the ALPHA mode and NUMERIC mode. The [A] symbol is shown on the display in the ALPHA mode, and disappears in the NUMERIC mode.



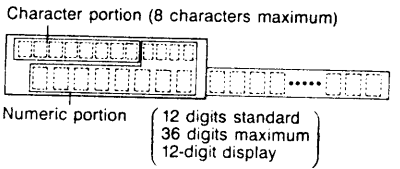
Example: [T/8]
ALPHA mode — B
NUMERIC mode — 7

The Telephone Number Storage Function

Telephone Number Storage Function lets you store up to 1,904 characters of (including Schedule data). Up to 8 characters can be entered in the character on of each data item. For details on determining the remaining memory capacity, "**Calculating the Remaining Memory Capacity**" on page 31.
can also protect confidential data using the Secret Function described on page 20.

About the display

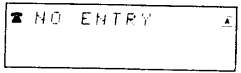
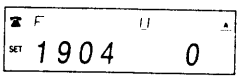
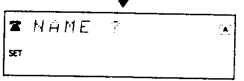
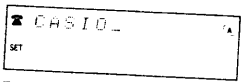
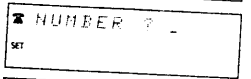
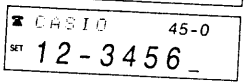
The illustration below shows the TEL mode display, with its ***character portion*** and ***numeric portion***. The character portion can hold up to 8 alphabetic characters, symbols and numbers, while the numeric portion can hold up to 36 digits.



The display can show 8 characters/numbers in its character portion and 12 numbers in its numeric portion at one time. You can scroll the display using the [◁] and [▷] keys to view characters and numbers off the left and right sides of the display.

Inputting Telephone Data

Example: To input a data "CASIO 045-012-3456"

Operation	Display	Remarks
☎		TEL mode Display indicates that nothing is contained in memory.
CAPS N/S		
	↓	
		Initial display of the input mode. **If A symbol does not appear, press ALPHA key.**
CASIO		
SET		
045-012-3456		
SET		The display is ready for input of the next data items.

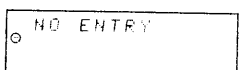
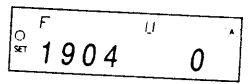
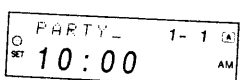
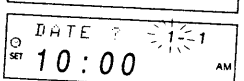
After you have finished inputting telephone data, press the AC key or ALARM key.
See page 17 for data recalling.

Schedule Function

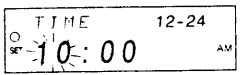
The Schedule Function lets you store up to 1,904 characters of data (including TEL data). Up to 8 characters can be entered for each schedule item. For the details on determining the remaining memory capacity, see "**Calculating the Remaining Memory Capacity**" on page 31. When a scheduled time is reached, a buzzer sounds for about 20 seconds.
You can also protect confidential schedule using the Secret Function (see page 20).

Inputting Schedule Data

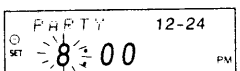
Example: To input a schedule for a party at 8:00 PM on December 24th

Operation	Display	Remarks
[⊙]		SCHEDULE mode Display indicates that nothing is contained in memory.
[CAPS N/S]		Initial display of the input mode. If AM (or PM) is not shown on the display, the 24-hour format is selected, so you must enter the times for schedule data items in the 24-hour format. Scheduled times are displayed according to the current time format setting (12-hour/24-hour) of the calculator. You can switch between formats using the procedure described on page 33 ~ 35.
([ALPHA]) PARTY		**If [A] symbol does not appear, press [ALPHA] key**
[SET]		

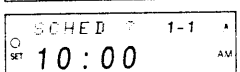
12 ▷ 24 SET



8 AM/PM



SET



The display is ready for input of the next data items.

After you have finished inputting schedule data, press the AC key or ALARM key.

The Schedule Alarm

When the year, month, date, hour and minute of a schedule item is reached, an alarm sounds for 20 seconds. To activate the alarm tone, see page 39.

Recalling Telephone/Schedule Data Items

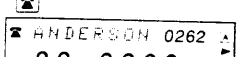
You can recall data items using one of the several search techniques:

Sequential Search (TEL, SCHEDULE)
Initial Search (TEL)
Month Data Search (SCHEDULE)

Using Sequential Search

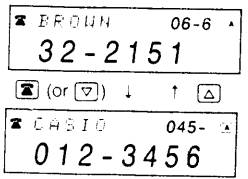
Sequential search lets you scroll through the data until you find the specific data item that you want.

☎



☎ (or ▽) ↓ ↑ △

Telephone data items are sorted alphabetically, and they are listed as such during Sequential Search. Schedule data items are sorted and displayed chronologically.



With the Schedule Function, press the ⊙ key instead of the ☎ key.

Important

Once the date for a scheduled data item passes, the same data item is restored for the same data the following year. See page 28 for details on deleting data items.

- The "►" symbol on the display indicates that there is more data off of the right side of the display, press the ▷ key to scroll the display and view the data to the left.
- After you have scrolled the screen to the left, you can scroll back to the right by pressing the ◁ key.
- If you hold down ☎/⊙, ▽, △, ▷, or ◁ key, the calculator will scroll at high speed.

Using Initial Search

This function lets you recall data items by simply specifying the first letter of the item. If more than one data item start with the same letter, you can scroll through all of the items recalled to find the one you want.

1. Press the ☎ key to display the first data item stored in memory.
2. Enter the letters, numbers or symbols for the data item you want to look for and press the ☎ key.

Using Month Data Search

1. Press the AC key to put the calculator mode ("0." should be shown on the display).
2. Enter the number for the month you wish to recall (1 ~ 12).
3. Press the ⊙ key to display the first data item for the month you specified.

- When there are more than one data items stored for the month you specify, the calculator automatically displays the first data item stored for that month.

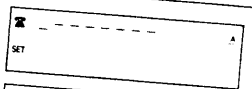
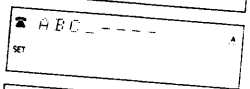
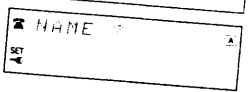
- The message "NO ENTRY" appears on the display when there is no data registered for the letter or month you specify.
- Press the [☎]/[○] or [▽] key to scroll sequentially through data items, starting from the one located by the procedure described "Using Sequential Search".

Secret Function

Once you assign a secret password (up to eight characters long), any telephone or schedule data stored in the secret area cannot be viewed by anyone who does not know the password.

Registering a Password (To make the Secret Area)

Example: Enter the password "ABC".

Operation	Display	Remarks
[☎] (or [○]) [CAPS N/S] [◄]		
ABC		
[◄]		Secret symbol (◄) appears. Use the procedures described for TEL mode (page 10) and SCHEDULE mode (page 14) to input the appropriate data.

- After you finish inputting to the secret area, be sure to always press the [◄] or [AC] key to exit from the secret area.

- Only one password can be registered at one time.

Important
Be sure to remember your password or make a note of it somewhere. If you forget it, you will not be able to read the data stored in the secret area. You can only cancel a forgotten password by performing the Secret Reset operation on page 41. Note, however, that this operation also erases all of the data from the secret area.

Recalling Data From the Secret Area

1. Press the [▲] (or [⊙]) key, and the [◄] key.
2. Enter the password you registered previously ("ABC" in the previous example).
3. Press the [◄] key to display the first data item in the selected (TEL or SCHEDULE) secret area.

- If you enter the wrong password, the calculator will simply wait for you to enter a password again. Enter the correct password.

4. Recall data using normal procedures.

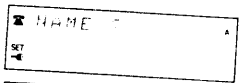
- Perform the same procedure to add, correct or delete data items stored in the secret area (see page 25).

Changing the Password

Example: To change the password from "ABC" to "CASIO"

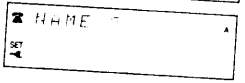
Operation	Display	Remarks
[▲] (or [⊙]) [CAPS N/S] [◄]	▲ _ - - - - - - - A SET	

ABC ◄



:c ◄

▷ CASIO ◄



If the new password is shorter than the previous one, be sure to press the :c key following the ▷ key to clear the previous password before entering the new one.

Generally, pressing the ◄ key while you are in the secret area will exit from the secret area. In the following cases (while in the secret area), however, pressing the ◄ key will display the current password.

- While "NAME ?" or "FULL" is displayed in the TEL mode after you press the :c key
- While "SCHEDULE ?" or "FULL" is displayed in the SCHEDULE mode after you press the :c key

To exit from the secret area, press ◄ again or AC.

Editing Data Items

The following procedure can be used to edit and delete data items in the TEL mode and SCHEDULE mode.

Correcting

The procedure you should use to correct a telephone or schedule data item depends on if the correction is made while you are entering the item (before you press SET) or if it has already been stored in memory (by pressing SET).

- **Before** [SET]

1. Use the [▷] and [◁] keys to move the cursor to the location of the character to be changed.
2. Make the changes you want and press the [SET] key or press the [C] key to clear the display and start again.

- **After** [SET]

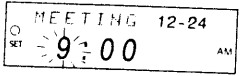
1. Press the [☎]/[⏲] key to enter the TEL SCHEDULE mode.
2. Press the [M/S] key.
3. Recall the data to be corrected by using sequential search.
4. Press the [▷] key to automatically locate the cursor at the beginning of the text of the data item, or the [◁] key at the end of the text.
5. Use the [▷] and [◁] keys to move to the position of the change and press the correct character or number key to make the change. Then press [SET] key. If you do not wish to change the text of the data item, press the [SET] key to move on to the numeric portion.

6. Make the changes you want and press the [SET] key.
7. Press the [M/S] key to complete the procedure.

Example: Correct Party 12-24 8:00 PM to MEETING 12-24 9:00 AM in SCHEDULE mode.

Operation	Display	Remarks
[⏲] [M/S]	SCHED 1- 1 / SET 10:00 AM	
[⏲] (or [▽]) several times)	PARTY 12-24 / SET 8:00 PM	
[▷] MEETING [SET]	MEETING 12-24 / SET 8:00 PM	

[SET] 9



Deleting

1. Press the [☎]/[○] key to enter the TEL/SCHEDULE mode.
2. Press the [CAPS N/S] key.
3. Recall the data to be deleted by using sequential search.
4. Press the [▷] key or the [◁] key.
5. Press the [C] key.
6. Press the [SET] key to delete the data from memory. Then the initial display of the input mode appears.
7. Press the [CAPS N/S] key to complete the procedure.

Example: Delete CASIO 045-012-3456 in TEL mode.

Operation	Display	Remarks
[☎] [CAPS N/S]	☎ NAME ? SET	
[☎] (or [▽] [△]) (several times)	☎ CASIO 045- SET 012-3456	
[▷]	☎ _ASIO 045- SET 012-3456	
[C] [SET]	☎ NAME ? SET	

Automatic Sorting

Telephone

The calculator automatically sorts data items alphabetically according to their character portions. Items are sorted in the following sequence:

Space, Hyphen, Period, Numbers 0 ~ 9, Alphabetic characters (A ~ Z)

Schedule

The calculator automatically sorts schedule data items in memory chronologically.

> ***Note***
> Schedules can be stored for any date within one year from the current date. If today's date were August 5, you could store schedules for any date from August 5 this year through August 4 of next year.

Calculating the Remaining Memory Capacity

The amount of memory used by an individual data item depends on the length of the character and numeric portions of the item. Use the following methods to calculate the amount of memory used by each data item.

Telephone Data

$$\begin{matrix}\text{number of characters}\\ \text{in the character portion}\end{matrix} + \begin{matrix}\text{number of numbers}\\ \text{in the numeric portion}\end{matrix} \times 2/3 + 5/3$$

Schedule Data

16 characters per data item

- All characters, numbers, and symbols are counted as 1.
- Spaces (except those at the very end) are each counted as 1.

Based on the above, we can calculate the maximum number of data items that can be stored by each function (assuming that nothing is stored under other functions) as follows.

Telephone data only

If all items contain 6 characters and 8 numbers:

$1904 \div (6 + 8 \times {}^{2}/_{3} + {}^{5}/_{3}) = 146.461 \cdots$ 146 data items

If all items contain 6 characters and 12 numbers:

$1904 \div (6 + 12 \times {}^{2}/_{3} + {}^{5}/_{3}) = 121.531$ 121 data items

Schedule data only

$1904 \div 16 = 119$ 119 data items

Time Function

Your calculator comes equipped with a versatile digital timepiece, complete with a fully automatic calendar and 12-hour/24-hour formats.

Setting the Clock and Calendar

Example: To set a time of 8:25:00 PM, February 10, 1990.

Operation	Display	Remarks
(ALARM)	SUN '90 11- 1 10:59 05 AM	Check to see that the calculator is displaying the current time. If not, press the ALARM key.
CAPA N/S (Press approx. two seconds)	1 90 11- 1 SET 10:59 07 AM	The seconds digits should start to flash.

Setting the Clock and Calendar

• Setting the Seconds

Use the following procedure to set the seconds at "00" on the sounding of a time tone (over the radio, TV, or telephone).

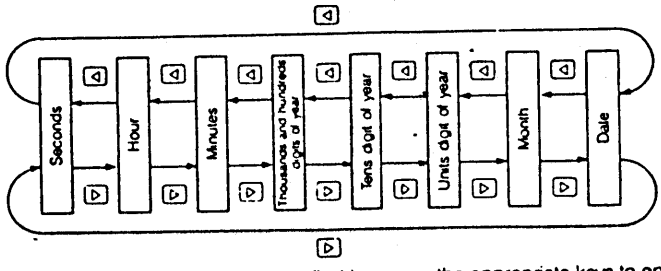
1. Check to see that the calculator is displaying the current time. If not, press the [MODE] key.
2. Hold down the [SET] key for about two seconds until the seconds digits flash.
3. Press the [SET] key on a time tone to set the seconds to "00".
4. Press the [SET] key to stop the seconds from flashing.

- If the current seconds count is in the range of 00 – 29 when you press the [SET] key, the seconds are made "00" without affecting the minutes. In the range of 30 – 59, the seconds are made "00" and the minutes are advanced by 1.

• Setting the Clock and Calendar

1. Check to see that the calculator is displaying the current time. If not, press the [MODE] key.
2. Hold down the [SET] key for about two seconds until the seconds digits flash.
3. Press the [▷] and [◁] keys to change the digits to be set (the flashing digits) as illustrated below.

- Holding down either key changes at high speed.



4. When the digits you wish to set are flashing, press the appropriate keys to enter the desired numbers.

- The day of the week is adjusted automatically to match the month/date setting.

5. To complete the setting, press the [SET] key.

Example: To set an alarm time of 8:05PM.

Operation	Display
Press [SET].	12:00
Press [▲].	12:00
Enter hour and minutes. 8 [▷] 05	8:05
Specify PM. [▲]	8:05
Press [SET] to store.	8:05
Press [SET] to complete.	8:05

- If you make a mistake during the setting procedure, simply return to the location of the error using the [▷] and [◁] keys, and correct as required.
- Each time you press the [▲] key, the setting changes between AM and PM.
- The alarm time follows the same format (12-hour/24-hour) specified for the time (see page 41).
- You can test the alarm by holding down the [SET] key while in the SCHEDULE or ALARM mode.

Switching the Alarms ON and OFF

You can switch th schedule alarm, daily alarm and hourly tone ON and OFF individually.

Alarm	Key
Schedule	[▲]
Daily	[▼]
Hourly	[?]

Example: Setting June 10, 1988; 8:25PM.

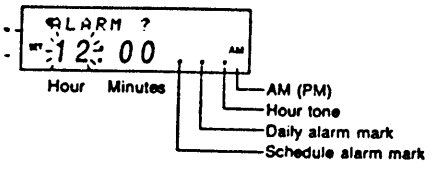
Operation	Display
Time display.	10:59 05
Press [MODE] key for two seconds.	10:59 07
Press [▷] key.	10:59 10
Enter hour. 8	8:59 13
Enter minutes. [▷] 25	8:25 18
Enter year, month, and date. [▷] [▷] [▷] 6 [▷] 10	8:25 38
Specify PM. [▲]	8:25 41
Press [MODE] key to complete.	8:25 45

- If you make a mistake during the setting procedure, simply return to the location of the error using the [▷] and [◁] keys, and correct as required.
- The fully automatic calendar automatically makes adjustments for differing month lengths and leap year.
- You can set the calendar within the range of January 1, 1901 through December 31, 2099.
- Each time your press the [MODE] key while the time is displayed, the calculator switches between 12-hour and 24-hour format.
- While the thousands digit is flashing during year input, pressing 1 automatically registers the 20th century (19xx), while 2 registers the 21st century (20xx). At this time, the cursor move to the tens digit for further input.

Alarm Function

The alarm can be set to the exact hour and minute. When a preset time arrives, an electronic buzzer sounds for 20 seconds. You can also set the timepiece of the calculator to sound a double beep every hour on the hour.

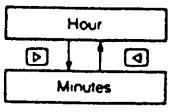
- The alarm setting format (12-hour/24-hour) always matches the current specification for the time display.



Setting the Alarm

1. Press the MODE key while the time is displayed.
2. Press the SET key. At this time, the hour digits should start to flash.
3. Press the appropriate keys to enter values for the hour setting.
4. Press the ▷ key to move to the minute digits.
5. Press the appropriate keys to enter values for the minute setting.

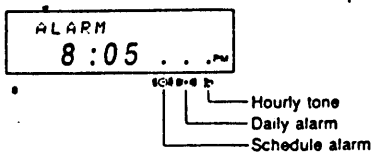
- You can switch between the hour digits and minute digits at any time using the ▷ and ◁ keys.



6. Press the SET key to enter the setting into memory.
7. Press the MODE key to complete the alarm setting procedure.

- Be sure to press the SET key before the MODE key. Otherwise, the new data is not stored in memory.

Each time you press one of these keys, the corresponding alarm is switched ON or OFF. An alarm is ON when its symbol (•) is shown on the display.

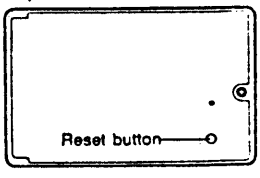


When multiple alarms are set for the same time, they sould in the following order of precedence:

schedule alarm, daily alarm, time tone, monitor alarm

Resetting the Calculator

Be sure to note that when you ***reset*** the calculator, everything stored in memory is ***erased.***



1. Press the reset button on the back of the calculator with a thin, pointed object.
2. The message "RESET ?" will appear on the display to confirm whether or not you really wish to reset the calculator and erase all of the memory contents. If you wish to do so, ***press the*** [=] ***key.*** If you wish to cancel the RESET operation without erasing the contents of the memory, press any of the key except the [=] key.
3. The display will show "0.", indicating that all data has been erased from memory.

- When you reset the calculator, the following values are reset as indicated:

Year:	1988	Format mode:	12-hour
Month:	January (1)	Input mode:	Character
Date:	1	Alarms:	12:00 midnight; all OFF
Time:	12.00 midnight		

Calculations

- Press the [AC] key to specify the CAL mode.
- The following indicators also appears on the display:
  - M: Indicates that a value is stored in the independent memory.
  - K: Indicates that a constant calculation is being performed.
  - E: Indicates that an error has occurred*.

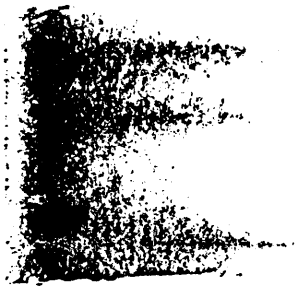
* You can clear an error and continue with the current calculation by pressing the [C] key. You can clear the error along with the current calculation by pressing the [AC] key.

Corrections

- Clear the last numeric entry by pressing the [C] key immediately after making the initial entry.
- You can correct the last arithmetic operator entry ([+], [−], [×], [÷]) by pressing the correct arithmetic operator key immediately after making the initial entry.
- Press the [AC] key to clear an entire calculation.
- Pressing the [MC] (memory clear) key clears memory contents.

Calculation Examples

Examples	Operation		Display
		[AC]	0.
53+123−63=	53 [+] 123 [−] 63	[=]	113.
963×(23−56)=	23 [−] 56 [×] 963	[=]	−31779.
(56×3−89)÷5.2+63=	56 [×] 3 [−] 89 [÷] 5.2 [+] 63	[=]	78.192307
123456×741852=	123456 [×] 741852	[=]	E 915.86080
		[C]	915.86080
		[AC]	0.



$\sqrt{3} \times 5 =$	3 √ × 5 =		8.660254
$12 + 23 =$	23 + 12 =	K+	35.
$45 + 23 =$	45 =	K+	68.
$78 + 23 =$	78 =	K+	101.
$7 - 5.6 =$	5.6 − 7 =	K−	1.4
$2 - 5.6 =$	2 =	K−	−3.6
$2.3 \times 12 =$	12 × 2.3 =	K×	27.6
$4.5 \times 12 =$	4.5 =	K×	54.
$45 \div 9.6 =$	9.6 ÷ 45 =	K÷	4.6875
$78 \div 9.6 =$	78 =	K÷	8.125
12% of 1500	1500 × 12 %		180.
Percentage of 660 against 880	660 ÷ 880 %		75.
15% add-on of 2500	2500 × 15 % +		2875.

25% discount of 3500	3500 × 25 % −		2625.
What will the selling price and profit be when the purchasing price of an item is $480 and the profit rate to the selling price is 25%?	480 + 25 %		640.
	−		160.
If you made $80 last week and $100 this week, what is the percent increase?	100 − 80 %		25.
$80 \times 9 = 720$	MC 80 × 9 M+	M	720.
$-) 50 \times 6 = 300$	50 × 6 M+	M	300.
$20 \times 3 = 60$	20 × 3 M+	M	60.
480	MR	M	480.

Specifications

Model: DC-830

Telephone storage function:
Memory storage of up to 100 data items (8 alphabetic characters or numbers and 12 numbers (36 numbers max.) per item); secret function; auto sort function

Schedule storage function:
- Memory storage of up to 100 sets of schedule data (8-character message, month, date, hour, minutes); secret function
- A combined total of up to 100 data items may be stored in TEL mode and SCHEDULE mode.

Watch function:
Average of accuracy ±3 seconds per day under normal temperatures; hour, minute, second, year, month, date, day display; full automatic calendar

Alarm function:
Schedule alarm set in month, date, hour and minutes; Daily alarm set in hour and minutes; 20-second electronic buzzer; hour tone

Calculator function:
8-digit arithmetic calculations; independent memory; 16-digit approximations; function command signs

General

Main component: LSI
Power supply: Lithium battery (CR2016) × 2
Power consumption: 0.0066 W
Battery life: Approximately one year
Ambient temperature range: 0°C – 40°C (32°F – 104°F)
Dimensions: 3.9 (H) × 85.5 (W) × 54.5 (D) mm
(1/8" (H) × 3 3/8" (W) × 2 1/8" (D))
Weight: 32 g (1.1 oz) (including batteries)